

Impacts of Brachiaria Forage –Livestock Systems to Food and Nutrition Security in Africa

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The problem/challenges

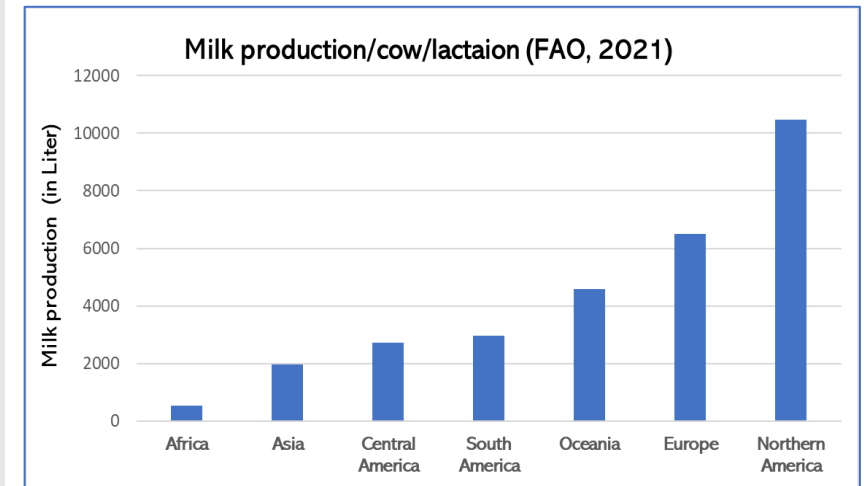
- ▶ Africa has the lowest livestock productivity
- ▶ Low quality and seasonal availability of feed are the major limiting factors
- ▶ Climate changes have aggravated shortage of feed resources
- ▶ African forages have transformed livestock sectors elsewhere but their use is extremely limited in the continent

The solutions

- ▶ Sustainable Agriculture Intensification (SAI) using Agroecological (AE) practices
- Brachiaria forage: High biomass yield, nutritive to livestock & climate resilient

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Objective/s

- Validation and/or upscaling improved Brachiaria grass cultivars using farmer-led experimentation, backed by innovative Extension and Advisory Services (EASs) and Institutional Approaches (IIAs)

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Methodology/Approach

Innovations		InnovAfrica case countries			
		Kenya	Rwanda	Tanzania	Scale
Technology (SAI)	Brachiaria forage-livestock system	×/●	×/●	×	Field
Institutions (IIA)	Multi-actors platform (MAP)	×	×	×	Country
Extension (EASs)	Integrated farm plan (PIP)		×		Farm
	Village knowledge centres (VKC)	×		×	Village



Key Results/Outputs: *Brachiaria* forage livestock system Kenya Case

- Validation study proved **1.90 to 2.23** folds increase in biomass production than locally grown forage.
- Improved forage availability & herd health, reduced feed purchase, and stabilized milk yield.
- Increased milk production (**up to 40%**), increased household income & changed milk consumption.
- **158 farmers** participated in on-farm testing, and many of them increased acreage.
- Farmers & extension agents were provided trainings, technical information and seeds.
- **Over 9,000** farmers had access to *Brachiaria* grass. Several thousands were reached through awareness efforts.

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EASs + IIAs

- *Village knowledge center*
- *Multi Actor Platform*

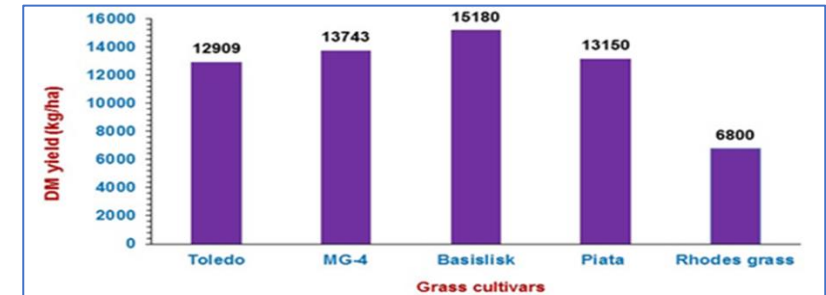


FIG 1: Annual dry matter yield of *Brachiaria* grass cultivars (kg/ha)



Key Results/Outputs: Brachiaria forage livestock system Rwanda Case

- Validation studies proved *Brachiaria* cultivars superior to *Panicum coloratum* due to high quality.
- Cows on *Brachiaria* produced **37% more milk** than those on Rhodes grass.
- A total of **80 farmers** participated in on-farm testing of *Brachiaria* grass.
- **About 11,690 farmers** were trained on forage production & conservation.
- Distributed seeds to **253 farmers** and **278 farmers** have established improved forage in InnovAfrica sites.
- Awareness campaign reached to **over 12,753 farmers** Rwanda.

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EASs + IIAs

- *Integrated farm plan (PIP)*
- *Multi Actor Platform*

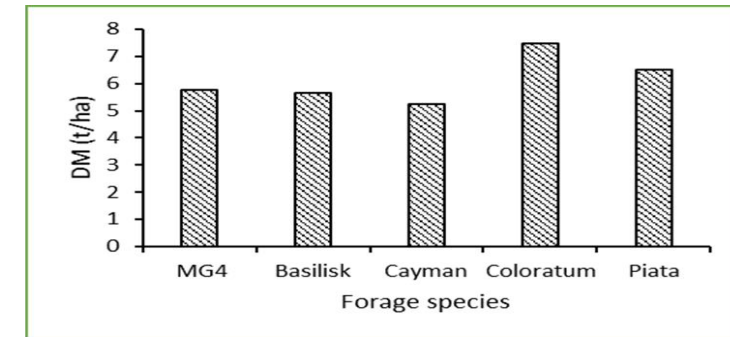


FIG2: Dry matter yield of improved forages



Key Results/Outputs: *Brachiaria* forage livestock system Tanzania Case

- *Six validation experiments in three districts - Rungwe, Iringa, and Morogoro*
- *Biomass production of *Brachiaria* grass (6.44 t/ha) was at par with Napier grass (7.72 t/ha)*
- *Validation studied revealed high yields of all three *Brachiaria* cultivars in sub-humid zone.*
- *Feeding dairy cows on *Brachiaria* increased in **milk yields and quality**.*
- *A total of **47 farmers** have established *Brachiaria* grass but many have been reached through awareness campaign.*

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EASs + IIAs

- *Village Knowledge Centre*
- *Multi Actor Platform*

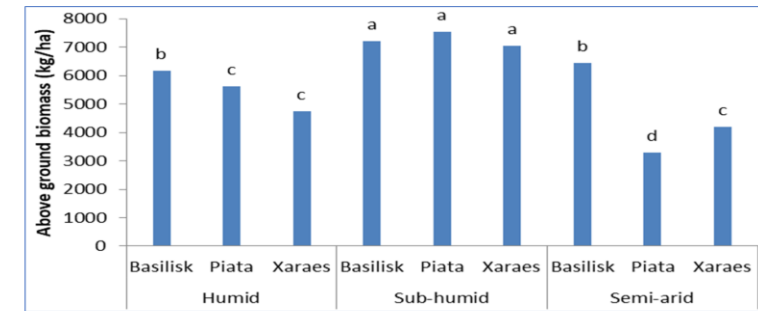


FIG 3: Biomass yields (t/ha) of three *Brachiaria* cultivars in different agroecology in Tanzania



Key Outcomes/Impacts



Ecological impacts : Acreage increase (102 -792%), improved soil fertility, and reduce GHGs



FNS impacts : Increase milk production (7 to 40%), changed household milk consumption (-6% to 5.7%) & changed household nutrition.



Socio-economic impacts: Increased awareness & adoption of technology, and increased income, employment & livelihood

Pathways of Upscaling Brachiaria forage SAI

- *Encourage collaborative investments and partnerships for Brachiaria grass seed system research and development*
- *Build a conducive policy environment to attract private sector to engage in production and sale of Brachiaria grass seeds and planting materials.*
- *Institutionalization of VKC (Kenya & Tanzania) and PIP (Rwanda) approaches*



Main Risks/Challenges

- Covid-19 pandemic
- Limited availability of *Brachiaria* grass seeds
- Expensive seeds (as high as US\$ 50 /kg)

Mitigation measures

- Virtual meetings, and/or physical meeting in smaller group
- Use of vegetative tillers

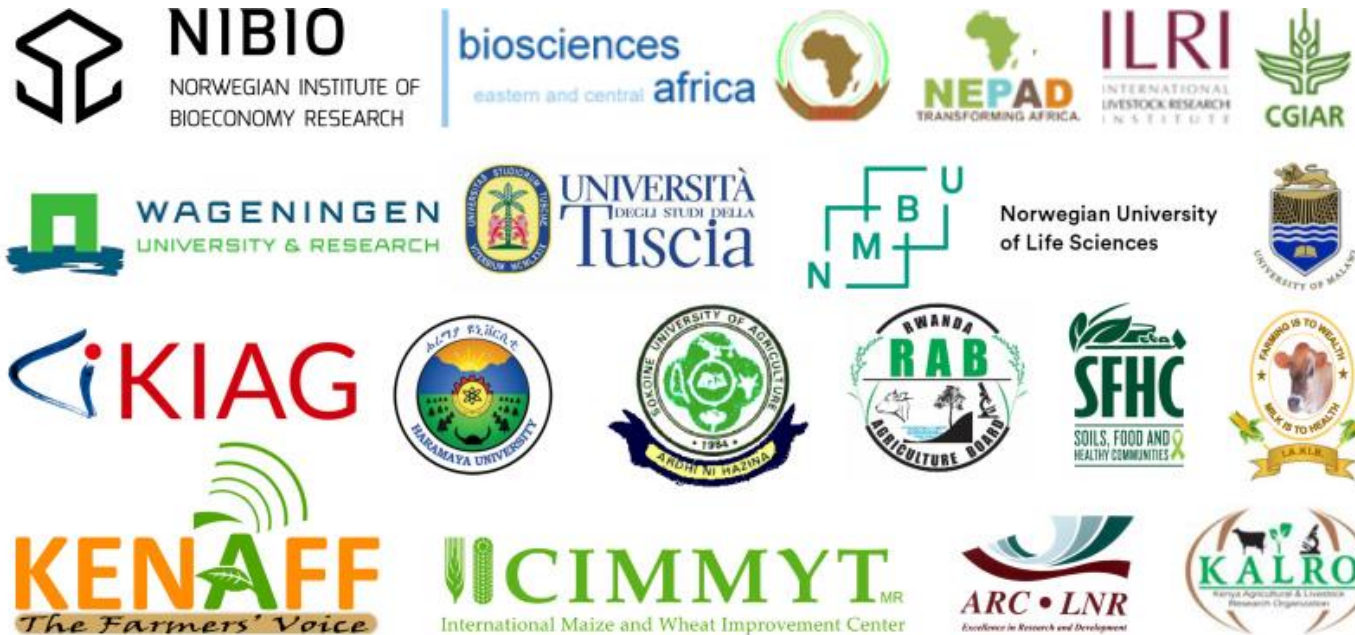


Lessons learned for practice

- *Brachiaria forage system is one of the most preferred agricultural innovation in sub-Saharan Africa with magnificent ecological, nutritional and socioeconomic impacts.*
- *Brachiaria grass has been part of many livestock research and development initiatives in Africa.*
 - *Climate smart Brachiaria program*
 - *Rwanda Dairy Development project*
 - *Accelerated Value Chain Development Program – Dairy*
 - *Kenya Crops and Dairy Market Systems*



Urochloa (syn. Brachiaria) grass production manual



Thank
You

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